US Army Medical Research and Materiel

Technology Available for Licensing

Portable Medical Digital Radiography Assembly

This invention is a portable medical digital radiography assembly for use in a field environment. It includes a ruggedized transport case housing several system components, including a digital X-ray image sensor, image display unit, and networking hardware and software, configurable for potential teleradiology applications. The x-ray generator is transported in its own ruggedized case. The digital X-ray image sensor is hinged to an adjustable height stand that is mounted to the transport case. The X-ray generator is preferably positioned opposite to the center of the image sensor. A patient support unit is provided between the sensor and the generator. An image acquisition unit is connected to the generator and sensor, and fixedly mounted in the transport case. An image display unit is connected to the acquisition unit which can be spaced away from the X-ray generator.

Numerous situations exist where it is desirable to obtain an X-ray of an individual in the field who is suspected of being injured without transporting them to a clinic or hospital. Military medical personnel are constantly treating injured soldiers on the battlefield who should or cannot be transferred to another setting until an X-ray is taken. Similar situations occur for athletes who are sometimes rendered unconscious or made incoherent on the field or court. The device provides a means to minimize the chances of aggravating injuries due to [illegible]t.

The X-ray generator and image display unit may be separated by at least 6 feet to minimize the radiologist's exposure to radiation. The image sensor can be positioned horizontally or vertically to accommodate standing or supine patients. The display unit contains software that supports images in DICOM and JPEG formats.

Features and advantages:

- **Self-contained, ruggedized device**
- **Assembles and interconnects in a variety of arrangements to facilitate imaging**
- **Includes a touchscreen display**
- **X-ray images can be taken and read at the site of injury**

Patent Status

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